PROJECT NUMBER: 1503
PROJECT TITLE: Modified Smoking Materials
PROJECT LEADER: W. A. Nichols
PERIOD COVERED: January 1989

I. LOW DENSITY ROD - BINDER APPLICATION

A. **Objective**: Produce precoated filler via the batch or continuous process to support the current product and process development efforts on the low density rod program. Develop a method of pre-applying binders to the tobacco in a manner that can be scaled up to commercial scale.

B. **Results**: Testing is being conducted to determine design specifications for a 10:1 scale-up of the coating process. Based on processing data, FMC, the manufacturer of the existing coating reel, suggested a 6'4" x 24' cylinder for an 800 lb/hr output. Using current coating procedures, two such cylinders would be required to achieve a 6% addition of pectin. On a production basis of three shifts per day, annual output would be sufficient for a 0.5% market share. The pectin spray system for the above cylinder is being discussed with Spray Dynamics Corp. A confidentiality agreement was recently signed.

Previous testing has shown that high OV coated filler (15%) produces improved low density rods. This can be achieved in the cylinder or by maximizing drying and reordering to 15% OV. Preliminary tests at maximum drying conditions allowed output to be increased from 80 lb/hr to 120 lb/hr. Further testing is planned.

Coated filler was produced for several product and process tests.

C. **Plans**: Further experimentation will be done with higher concentration pectin solutions in the continuous coating process to permit a 6% add-on in one pass.

II. BINDER TECHNOLOGY

A. **Objective**: Investigate the mechanism of filler bonding and stiffness produced by coating. Improve commercial feasibility by examining alternate binders and processes.

B. **Results**: Dry coating of pectin over a tackified filler was tested in the lab. Glycerin and pectin were used to precoat the tobacco. Retention to the glycerin appears greater than to the pectin precoat after a 30-minute vibration test. One of the batch dryers is being modified to dry coat 30-pound samples for cigarette fabrication.

Sample cigarettes were supplied to Mr. S. Ganeriwala for compression measurement at a range of OVs. Acoustical detection of filler breakage and debonding will also be attempted.

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A rapid pectin analysis method using the Infralyzer is being evaluated. Samples were given to Dr. T. Van Auken for feasibility studies.

C. **Plans**: Cigarettes will be fabricated from filler which has been dry coated with pectin. Laboratory reactivation testing will be conducted to determine if the 6% pectin coating is being fully reactivated during cigarette fabrication.

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